

BRIEF BIOGRAPHICAL SKETCH

Linda J. Saif

Dr. Linda Saif is a Distinguished University Professor at The Ohio State University (OSU) in the Food Animal Health Research Program (CFAES, OARDC) and the Veterinary Preventive Medicine Department (CVM, OSU). She is a virologist and immunologist, whose research focuses on comparative aspects of enteric and respiratory viral infections (coronaviruses, rotaviruses and caliciviruses) of food animals and humans. Her lab studies mucosal immunity and vaccine development and is currently focusing on the impact of malnutrition and micronutrient deficiencies on vaccines and interactions of probiotics and the gut microbiota with the neonatal immune system, vaccines and viral pathogenesis. Her team's discovery of the gut-mammary secretory IgA axis (initial description of a common mucosal immune system) in swine was a breakthrough for development of maternal coronavirus vaccines to passively protect neonatal animals. Her lab identified new enteric viruses (group C rotavirus, caliciviruses), characterized their pathogenesis and developed novel cultivation methods, diagnostic assays and vaccines for them. Her current research emphasizes attenuated and novel bioengineered virus-like particle (VLP) vaccines and adjuvants (vitamin A, probiotics) to prevent viral diarrheas in humans and animals and their evaluation in germfree animal disease models. Her lab also investigates the interrelationships among animal viruses, especially coronaviruses, and their human counterparts to assess their zoonotic potential, mechanisms of interspecies transmission and potential vaccines. She also conducts research on foodborne viruses including noroviruses and sapoviruses.

Coronavirus research in Saif lab

Dr Saif's coronavirus research spans 4 decades and includes her MS and PhD research on swine coronaviruses, immunity and vaccines. Dr. Saif is known nationally and internationally for her work on enteric viruses (rotaviruses, caliciviruses and coronaviruses) that affect food-producing animals, wildlife, and humans (Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) coronaviruses. Dr. Saif's lab was the first in 1995 to document the interspecies transmission of coronaviruses from wild ruminants to cattle and from cattle to poultry. In cattle, Dr. Saif's lab documented that respiratory coronavirus infections frequently occur in animals shortly after periods of stress such as arrival to feedlots following long-distance shipping, and her lab identified them as a component of the shipping fever complex. Her research on ruminant coronaviruses and their interspecies transmission is particularly relevant to the documented zoonotic transmission of MERS from camels to humans in the Middle East. Dr. Saif was a lead consultant to the WHO during the 2003 SARS outbreak and her laboratory is a WHO International Reference Lab for Animal coronaviruses in the SARS network. Dr. Saif has assisted the U.S. CDC to better understand SARS to prevent or control future pandemic threats. She served as an animal coronavirus expert for the Ministry of Agriculture in Saudi Arabia to advise officials on MERS in camels and control strategies. Her lab was an International Reference Lab for TGEV porcine coronavirus for the Office International des Epizooties (OIE), Paris, France. With the new Wuhan coronavirus (2019-nCoV) outbreak in December 2019 in China, she is providing expertise about this new virus and on how to control its spread at the local, regional, national and international levels.

Dr. Saif is a member of the U.S. National Academy of Sciences (2003) and the Argentine Academia Nacional de Agronomía y Veterinaria (2009). She is an elected Fellow of the American College of Veterinary Microbiologists (1990), the American Association for the Advancement of Science (1995), the American Academy of Microbiology (2004) and the National Academy of Inventors (2017). She was awarded an Honorary Doctorate from the

University of Ghent, Belgium (2003). In 2015, she became the first woman to receive the Wolf Prize in Agriculture. She has served as a member of advisory teams for various US and international organizations (USAID, CDC, WHO, OIE, etc), she was a Fulbright Scholar (Argentina) and she serves on several journal editorial boards (Proc Nat Acad Sci, Ann Rev Animal Biosciences, Frontiers in Immunology, etc). Dr. Saif holds 5 US/foreign patents and has authored or coauthored over 400 journal publications and 78 book chapters pertaining to her research.